

REMARKS

I. Status of the Application.

Claims 1-23 were pending in the above-referenced Application. In the Office Action, the Examiner determined that there were allegedly four inventions or groups of inventions which were not so linked as to form a single general inventive concept under PCT Rule 13.1. This determination requires Applicants, in accordance with 37 C.F.R. § 1.499, to reply to the Office Action by electing a single invention to which the claims must be restricted.

In the Office Action, the Examiner identified the following four Groups of claims:

- Group I: Claims 1-11, drawn to an electrode.
- Group II: Claims 12-15, drawn to a separator plate.
- Group III: Claims 16 and 17, drawn to an electrolyte.
- Group IV: Claims 18-23, drawn to an electrical device.

The Examiner set forth a shortened statutory period for reply of one (1) month or thirty (30) days, whichever is longer. The longer period (one month) ended on Sunday, November 16, 2008, and pursuant to 37 C.F.R. § 1.7, this Response is being filed on the next succeeding business day, namely Monday, November 17, 2008, effectively within the shortened statutory period for reply.

II. Provisional Election.

Applicants provisionally elect Group I (claims 1-11) as identified by the Examiner, and respectfully traverse the restriction requirement.

III. The Restriction Requirement Should be Withdrawn.

Applicants respectfully submit that for the reasons provided herein the restriction requirement is improper and should be withdrawn, allowing claims 1-23 of the present Application to be examined in their entirety.

A. Claims 1-23 of the Present Application Satisfy PCT Rule 13.

Applicants respectfully submit that claims 1-23, as originally filed, satisfy the requirements of PCT Rule 13, and as such, claims 1-23 should be examined in their entirety.

Rule 13.1 of the PCT requires that "[t]he international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept." PCT Rule 13.1. An applicant will be considered to have fulfilled the unity of invention "when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features." PCT Rule 13.2. "[W]hether a group of inventions is linked so as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim." PCT Rule 13.3. Therefore, the determination of unity of invention allows one invention or a group of inventions comprising a single general inventive concept to be claimed in any manner that encompasses the invention or group of inventions within the entirety of the claims.

Applicant respectfully submits that the claims as filed fulfill the requirements under PCT Rule 13 as enumerated above. Specifically, the present Application relates to "a conductive polymer and conductive polymer electrode compositions and their uses, particularly a polymer bonded carbon electrode." Application, p. 1, ll. 4-6. As described in greater detail herein, each

of the pending independent claims of the present Application (namely claims 1, 12, 16, and 18) contain the single inventive concept of an "ester-cured alkaline phenolic resin containing conducting alkaline salts," and the presence of an electrode (claims 1-11), a separator plate (claims 12-15), an electrolyte (claims 16 and 17), and an electrical device (claims 18-23) contained within those claims are merely different embodiments of using this single inventive concept as claimed and described within the present Application. Applicants respectfully submit that this single inventive concept, when recited in different embodiments within the claim, both satisfies the requirements of PCT Rule 13 and renders the present restriction requirement moot.

In the Office Action, the Examiner cites U.S. Patent No. 4,626,569 to Waitkus et al. ("Waitkus") to support the argument that Groups I-IV allegedly do not relate to a single inventive concept under PCT Rule 13.1, because, under PCT Rule 13.2, they allegedly lack the same or corresponding special technical features for the following reasons:

"US Patent 4626569 teaches a composition which can comprise a blend of novolac and resole resins with a carbonaceous filler (Abstract) wherein the resole resin is made by a process detailed in Example III (Col. 12, lines 56-60) wherein a resole and formaldehyde are reacted together using a sodium hydroxide base catalyst and the composition can further contain ester containing additives (Col. 8, line 38)."

Office Action, p. 2.

Applicants respectfully submit that as discussed in further detail herein, the composition and related procedure for preparing the composition disclosed within Waitkus does not teach, disclose, suggest, or otherwise refer to the composition disclosed within the present Application. As such, Waitkus cannot be considered as prior art which would cause claims 1-23 of the present Application not to relate to a single inventive concept under PCT Rule 13.1.

B. Each of Claims 1-23 of the Present Application Relate to a Single Inventive Concept under PCT Rule 13.1.

Applicants respectfully submit that each of claims 1-23 of the present Application relate to a single inventive concept under PCT Rule 13.1, namely the presence of an "ester-cured alkaline phenolic resin containing conducting alkaline salts." Applicants respectfully submit that this single inventive concept is recited verbatim within each of the independent claims of the present Application (namely claims 1, 12, 16, and 18), and that each of the dependent claims of the present Application (namely claims 2-11, 13-15, 17, and 19-23) either directly or ultimately depend from one of the aforementioned independent claims of the present Application.

C. Waitkus Does not Impact Applicants' Single Inventive Concept under PCT Rule 13.1.

Applicants respectfully submit that Waitkus neither teaches, discloses, suggests, or otherwise references an "ester-cured alkaline phenolic resin containing conducting alkaline salts" in the context of an electrode (present claims 1-11), a separator plate (claims 12-15), an electrolyte (claims 16 and 17), and an electrical device (claims 18-23) as claimed in the present Application.

1. Applicants' Claimed Resin is a Patentably Distinct Resin than that Disclosed within Waitkus.

Applicants respectfully submit that the "ester-cured alkaline phenolic resin containing conducting alkaline salts" claimed in claims 1-23 of the present Application are not taught, disclosed, suggested, or otherwise referenced by Waitkus.

Waitkus discloses a standard method for preparing a phenol-formaldehyde resole using sodium hydroxide as a catalyst. In one example (Example III of Waitkus, cited by the Examiner

in the Office Action), the reaction requires 15.96 mol phenol, 20.75 mol aqueous formaldehyde, 0.16 mol hexamethylenetetramine, and 0.17 mol sodium hydroxide. Waitkus, col. 12, ll. 56-60. Thus, this exemplary combination contains a mole ratio of 0.01 sodium hydroxide to phenol ($0.17/15.96 = 0.01$), which is a typical mole ratio used to catalyze resole synthesis in the chemical arts.

Conversely, the present Application discloses the preparation of an alkaline phenol-formaldehyde resin with a sodium hydroxide to phenol mole ratio of 0.65:1, namely 65 times higher than that typically used in the art, including the disclosure of Waitkus. In Example 1 of the present Application (paragraph 0080), an exemplary alkaline phenol-formaldehyde resin is produced by reacting 5 mol phenol, 0.1 mol sodium hydroxide, 3 mol formalin (formaldehyde), an additional 7.0 mol formalin, and an additional 3.15 mol sodium hydroxide. In this example, a total of 3.25 mol sodium hydroxide is reacted along with 5 mol phenol, which is an 0.65 mole ratio of sodium hydroxide to phenol. Applicants respectfully submit that this drastic difference in mole ratio of two critical elements of an alkaline phenol-formaldehyde resin as compared to the resins of Waitkus demonstrate that Applicants' resins define a clear contribution over Waitkus, and as such, Applicants' "ester-cured alkaline phenolic resin containing conducting alkaline salts" forms a single general inventive concept under PCT Rule 13.1. The resins disclosed within Waitkus are simply not relevant to the prosecution of the present Application.

2. The Ester Containing Additives of Waitkus Cannot Function as the Ester of the Present Application.

Applicants respectfully submit that the esters disclosed within Waitkus, as referenced by the Examiner, cannot function as the esters function as disclosed within the present Application.

In the Office Action, the Examiner argues that Waitkus teaches that "a resole and formaldehyde are reacted together using a sodium hydroxide base catalyst and the composition can further contain ester containing additives," citing col. 8, line 38 of Waitkus, in support of the Examiner's argument that the claims of the present Application do not relate to a single general inventive concept under PCT Rule 13.1. Office Action, p. 2. Col. 8, line 38 of Waitkus is contained within the following excerpt of Waitkus:

"Mold lubricants may be incorporated in the resins. Suitable lubricants include fatty acids of 14-22 carbon atoms, their esters of alcohols containing 1-22 carbon atoms and their metal salts, such as Ca, Zn and Mg salts. Typical of these which may be used are oleic acid, stearic acid, Montan wax, stearyl stearate, glyceryl monoleate, glyceryl monostearate, the commercial wax sold under the brand name "Acrawax", zinc, calcium and magnesium stearates, etc. For biomedical applications, the lubricants should be free of metals and metallic compounds. The lubricants may be used in proportions of 0.5-3 percent by weight based on total resin composition."
Waitkus, col. 8, ll. 36-48.

First, and as referenced above, this excerpted paragraph from Waitkus relates to "mold lubricants," comprising several exemplary fatty acid lubricants and waxes. Applicants respectfully submit that the lubricants disclosed within Waitkus are just that, namely mold lubricants used to allow for a molded part of Waitkus to be removed from a mold. Conversely, the esters of the present Application, including butyrolactone (an exemplary cyclic ester referenced within Example 2 (paragraph 0081) of the present Application), are clearly used as hardening agents and not mold lubricants. This is clear within the present Application within Example 2, whereby 50g resin is combined with 100g graphite, 50g water, and 10g butyrolactone (the hardener) is mixed in a paper cup, whereby "the mixture was poured into a latex mould and allowed to harden." Application, paragraph 0081. Thus, the "esters" referenced

by the Examiner are clearly not used for the same purpose as the esters of the present Application.

Second, the “suitable lubricants includ[ing] fatty acids of 14-22 carbon atoms [and] their esters of alcohols containing 1-22 carbon atoms” as disclosed within Waitkus cannot possibly be used to cure a resole of the disclosure of the present Application for the reason that such fatty acids and esters are not water-compatible. An exemplary curing procedure of the disclosure of the present application (Example II) includes the combination of resin, graphite, *water*, and an ester (namely butyrolactone as provided within the Example). The “suitable” fatty acids and esters referenced above within Waitkus are not water-compatible, and as such, they would be insufficient and ineffective in a use for curing a resole whereby the curing mixture contains water. The esters of acids of 14-22 carbon atoms and alcohols containing 1-22 carbon atoms of Waitkus are clearly lubricants, and not hardening agents, and are not suitable for use within a curing procedure of the present Application. Therefore, Applicants respectfully submit that the esters of Waitkus, clearly being incompatible with the esters of the present Application, are not relevant to prosecution and patentability of the pending claims of the present Application.

D. Unity of Invention Exists Among Claims 1-23 of the Present Application.

Applicants respectfully submit that in view of the foregoing, unity of invention does exist in the present Application under Rule 13, because the Application encompasses subject matter comprising a single general inventive concept noted above. This is supported by the fact that many of the special technical features referenced by the Examiner exist in the Examiner's alleged “Groups” of inventions.

Furthermore, Applicants respectfully submit that claims 1-23 of the present Application are not anticipated by the Waitkus as referenced above, and further submit that anticipation, *even if it did exist*, has no bearing on whether unity of invention under PCT Rule 13 exists in a given application because PCT Rule 13 makes no reference to whether any subset of claims is anticipated or made obvious by prior references. Rather, unity of invention is determined by whether a group of inventions comprises a single general inventive concept, and as demonstrated within the present Response, the present Application clearly relates to a single general inventive concept.

IV. No Serious Burden Exists Preventing the Examination of Claims 1-23 of the Present Application in their Entirety.

To establish a proper restriction requirement, the Examiner must show that the inventions are independent or distinct as claimed and that a serious burden would be placed on the Examiner if restriction is not required. 37 C.F.R. § 1.141(a); MPEP §§ 803(I) & 808. Applicants respectfully submit that, especially in view of the fact that each of the claims contains the single inventive concept of an "ester-cured alkaline phenolic resin containing conducting alkaline salts," no serious burden exists regarding the examination of claims 1-23 as a whole.

A. No Serious Burden Exists.

Applicants respectfully submit that the restriction is improper and should be withdrawn because a serious burden would not be placed on Examiner if restriction is not required. "If the search and examination of all claims in an application can be made without serious burden, the examiner *must* examine them on the merits, even though they include claims to independent or distinct inventions." MPEP § 803 (emphasis added). In the present Application, all the claims

are directed towards an ester-cured alkaline phenolic resin containing conducting alkaline salts in the context of electrodes, separator plates, and electrolytes. All the claims would fall within the same classification system and fields of search. The Examiner does not allege any differently in the restriction requirement because the Examiner did not provide any list different classes or subclasses that may need to be consulted for the different groups. Due to the relatedness of the claimed subject matter in claims 1-23, search and examination can be made without a serious burden on the Examiner. Accordingly, Applicants respectfully submit that this restriction requirement is improper and should be withdrawn because examination can be made without a serious burden to the Examiner, which requires the Examiner to examine all the claims on their merits.

B. Maintenance of Restriction would be an Admission by the U.S. Patent and Trademark Office that Each Alleged Group of Claims are Patentable Over One Another.

The Examiner is reminded that if this restriction requirement is maintained, it will have the effect of an admission on behalf of the Patent Office that (1) the Group I claims are patentable over the disclosure of the inventions of Groups II, III, and IV; (2) the Group II claims are patentable over the disclosure of the inventions of Groups I, III, and IV; (3) the Group III claims are patentable over the disclosure of the inventions of Groups I, II, and IV; and (4) the Group IV claims are patentable over the disclosure of the inventions of Groups I, II, and III. These positions are necessary for entry of the restriction requirement by the Patent Office and may be relied upon by Applicants during examination of this and any divisional or continuation application. MPEP §§ 802.01; 802.02; 803; 803.01; 806; 806.04(h); 806.05(f). Accordingly,

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Applicants respectfully submit that the restriction requirement should be withdrawn because the similarities of the claimed invention are such that the burden on the Examiner to search the prior art is minimal. MPEP §803.

V. Conclusion.

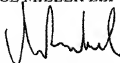
Applicants respectfully submit that the Examiner has not yet provided any specific rejection to any particular pending claim of the Application. The Office Action focuses solely on restriction, and as referenced within the present Response, Applicants demonstrate for a number of reasons why the disclosure of Waitkus does not have any impact regarding the examination of claims 1-23 of the present Application as a whole. Therefore, and in view of the present Response, Applicants respectfully submit that the present restriction be withdrawn by the Examiner, and Applicants respectfully request that the Examiner examine all pending claims of the present Application for patentability. As previously referenced herein, each of the four (4) independent claims claim an "ester-cured alkaline phenolic resin containing conducting alkaline salts," allowing the Examiner to review this element regardless of use as claimed in the context of an electrode (present claims 1-11), a separator plate (claims 12-15), an electrolyte (claims 16 and 17), and an electrical device (claims 18-23) as claimed in the present Application.

For the reasons set forth above, allowance of this Application is respectfully requested. Applicants believe no fees are due at this time. In the event Applicants have inadvertently overlooked the need for payment of any fees, Applicants conditionally petition therefor, and authorize any deficiency to be charged to deposit account 09-0007. When doing so, please reference the above-listed docket number. If there are any other further objections or rejections, the Examiner is invited to contact the undersigned to discuss the Application.

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Respectfully submitted,

ICE MILLER LLP

A handwritten signature in black ink, appearing to read 'Mark C. Reichel', written over the firm name.

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